

Figure 1: A block diagram of one preferred system architecture

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Figure 2: A flow chart of a preferred business process

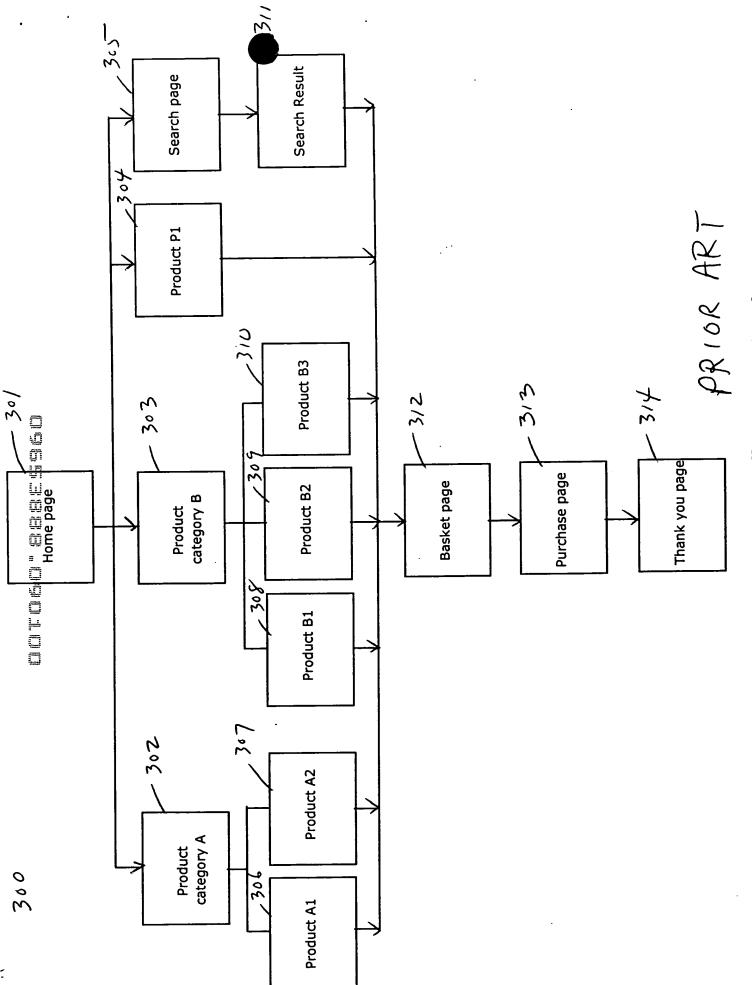


Figure 3: An example of an online store structure

Current Page Home Home Search A1 Home Search Result Home B2 B3 Purchase Home B3 Purchase Home Basket B3 Purchase Home Basket B4 Basket B4 An Home BASKET AN		×		Carry Co.	25 de Class 1	Shoo grad ,
Session ID Referrer Colored Session ID Referrer Colored S1	400	Land Control				Charles of the way
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S1 R1 Home S2 R2 Home S1 Home A S3 R3 Home S2 Home P1 S1 A A1 S1 A A1 S3 Home P1 S1 A1 Basket S2 Search Result B1 S1 Basket B S1 B B S1 B B S1 B B S1 B B S2 Basket Purchase S1 B B S2 Basket Purchase S1 Basket Purchase S1 Basket Purchase S1 Home A S2 Basket A S1 Basket Basket S1 Burchase Thank You S2 Purchase <td< th=""><th></th><th>Timestamp</th><th>Session ID</th><th>Referrer</th><th>Current Page</th><th>Links</th></td<>		Timestamp	Session ID	Referrer	Current Page	Links
S2 R2 Home S1 Home A S3 R3 Home S2 Home Search S1 A A1 S3 Home P1 S1 A1 Basket S2 Search Home S2 Search Result B1 S2 Search Result B1 S4 S1 Basket B4 S1 Basket B B1 Basket B S2 B1 Basket B S1 Basket Purchase B S3 P1 Home B S3 P1 Home B S1 Basket Purchase B S3 P1 Home B S3 P1 Home B S3 Basket Purchase B S3 Home A B <		T1	S1	R1		A, B, P1, Search
S1 Home A S3 R3 Home S2 Home Search S1 A A1 S3 Home P1 S3 Home P1 S2 Search Result S Sarch Result B1 A S1 Basket B S2 Search Result B S2 Search Result B S2 Basket B B B B S1 B B B3 Basket B S3 P1 Home P1 Home B S3 P1 B S3 P1 B S3 Basket B S3 Basket B S3 Basket B S3 Basket B S3 Home B S3 Home		T2	S2	R2	Home	A, B, P1, Search
S3 R3 Home S2 Home Search S1 A A1 S1 Home P1 S1 A1 Basket S1 A1 Basket S1 Basket Home S1 Basket B S2 Search Result B S1 B B A S1 B S2 Sarch Result B B S1 B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B		T3	S1	Home	А	A1, A2
S2 Home Search S1 A A1 S1 Home P1 S1 A1 Basket S2 Search Result Home 1 S2 Search Result B1 2 S1 Home B2 3 S1 B B2 4 S1 B B2 5 S2 B1 Basket 6 S1 B B3 7 S2 Basket Purchase 8 S3 P1 Home 9 S1 B3 Basket 0 S1 Basket Purchase 1 S1 Purchase Thank You 3 S2 Purchase Thank You		74	53	R3	Home	A, B, P1, Search
S1 A1 S3 Home P1 S1 A1 Basket S2 Search Search Result 0 S1 Basket Home 1 S2 Search Result B1 2 S1 Home B 3 S1 B B 4 S1 B B 5 S2 B1 Basket 6 S1 B B3 7 S2 Basket Purchase 9 S1 B3 Basket 0 S1 Basket Purchase 1 S1 Purchase Thank You 3 S2 Purchase Thank You		T5	S2	Home	Search	
S3 Home P1 S1 A1 Basket S2 Search Result Home S1 Basket Home S2 Search Result B S1 Home B S1 B B S1 B B S2 B1 Basket S1 B B3 S2 Basket Purchase S3 P1 Home S1 B3 Basket S1 Basket Purchase S1 Basket Purchase S1 Purchase Thank You S2 Home A		T6	S1	А	A1	Basket, A
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S2 Search Result Abme S1 Basket Home S2 Search Result B1 S1 Home B S1 B B2 S1 B B S3 P1 Home S1 B3 Basket S1 B3 Basket S1 Basket Purchase S1 Basket Americase S1 Basket Americase S1 Burchase Thank You S2 Home A S2 Home A		T8	S1	A1	Basket	Purchase, Home
S1 Basket Home S2 Search Result B1 S1 Home B S1 B B S1 B2 B S2 B1 Basket S1 Basket Purchase S1 B3 Basket S1 B3 Basket S1 Basket Purchase S1 Basket Purchase S1 Basket A S1 Basket A S2 Home A S2 Home A S3 Home A S3 Home A S2 Home A		T9	S 2	Search	Search Result	A2, B1, B2
S2 Search Result B1 S1 Home B S1 B B2 S1 B2 B S2 B1 Basket S1 B B3 S2 Basket Purchase S3 P1 Home S1 Basket Purchase S1 Basket Purchase S1 Purchase Thank You S2 Purchase Thank You		T10	51	Basket	Home	A, B, P1, Search
S1 Home B S1 B B2 S1 B2 B S2 B1 Basket S2 Basket Purchase S3 P1 Home S1 B3 Basket S1 Basket Purchase S1 Purchase Thank You S3 Home A S2 Purchase Thank You		T11	S 2	Search Result	B1	Basket, B
S1 B B2 S1 B2 B S2 B1 Basket S1 B B3 S2 Basket Purchase S1 B3 Basket S1 Basket Purchase S1 Purchase Thank You S3 Home A S2 Purchase Thank You		T12	51	Home	В	B1, B2, B3
S1 B2 B S2 B1 Basket S1 B B3 S2 Basket Home S1 B3 Basket S1 Basket Purchase S1 Purchase Thank You S3 Home A S3 Home A S2 Purchase Thank You		T13	S1	В	B2	Basket, B
S2 B1 Basket S1 B B3 S2 Basket Purchase S1 B3 Basket S1 Basket Purchase S1 Purchase Thank You S3 Home A S2 Purchase Thank You		T14	S1	B2	В	B1, B2, B3
S1 B B3 S2 Basket Purchase S3 P1 Home S1 B3 Basket S1 Basket Purchase S1 Purchase Thank You S2 Purchase Thank You S2 Purchase Thank You		T15	25	81	Basket	Purchase, Home
S2 Basket Purchase S3 P1 Home S1 B3 Basket S1 Burchase Thank You S3 Home A S2 Purchase Thank You S2 Purchase Thank You		T16	S1 ·	В	B3	Basket, B
S3 P1 Home S1 B3 Basket S1 Basket Purchase S1 Purchase Thank You S3 Home A S2 Purchase Thank You		T17	25	Basket	Purchase	Thank You
S1 B3 Basket S1 Basket Purchase S1 Purchase Thank You S3 Home A S2 Purchase Thank You		T18	23	P1	Home	A, B, P1, Search
S1 Basket Purchase S1 Purchase Thank You S3 Home A S2 Purchase Thank You		T19	S1	B3	Basket	Purchase, Home
S1 Purchase Thank You S2 Home A Thank You		T20	S1	Basket	Purchase	Thank You
S3 Home A S2 Purchase Thank You		T21	S1	Purchase	Thank You	Home
S2 Purchase Thank You		T22	S 3	Home	А	A1, A2
		T23	S 2	Purchase	Thank You	Home

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508	Links	A, B, P1, Search	A1, A2	Basket, A	Purchase, Home	A, B, P1, Search	B1, B2, B3	Basket, B	81, 82, 83	Basket, B	Purchase, Home	Thank You	Home
105	Current Page		А	A1	Basket	Home	В	B2	В	B3	Basket	Purchase	Thank You
206	Referrer		Home	A	A1	Basket	Home	В	B2	В	B3	Basket	Purchase
505	Session ID	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1	51
207	Timestamp	T1	T3	T6	Т8	T10	T12	T13	T14	T16	T19	T20	T21

(a) Session S1 -50/

Timestamp	Session ID Referrer	Referrer	Current Page	Links
T2	S2	R2	Home	A, B, P1, Search
T5	S2	Home	Search	
T9	S2	Search	Search Result	A2, B1, B2
T11	S2	Search Result	B1	Basket, B
T15	S2	B1	Basket	Purchase, Home
T17	S2	Basket	Purchase	Thank You
T23	52	Purchase	Thank You	Home

(b) Session S2

Timestamp	Session ID Referrer	Referrer	Current Page	LINKS
T 4	53	R3	Home	A, B, P1, Search
77	S3	Home	P1	Basket
T18	53.	P1	Home	A, B, P1, Search
T22	S3	Home	A	A1, A2

(c) Session S3 ~ 503

Figure 5: An example of sessions in an online store

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Product	CIICHTH OUGHS "	Basket signing	Purchase
impressions		placement	
T1, P1	T6, A1	T8, A1	T20, A1
T3, A1	Т13, В2	T19, B3	T20, B3
Т3, А2	T16, B3		
T10, P1			
T12, B1			
T12, B2			
T12, B3			
T14, B1			
T14, B2			
T14, B3			

(a) Micro-conversions of session S1 $- 6 \circ /$

Product impressions	Clickthroughs	Basket placement	Purchase
T2, P1	T11, B1	T15, B1	T17, B1
T9, A2			
T9, B1			
T9, B2			

(b) Micro-conversions of session S2 -652

Product	Clickthroughs	Basket	Purchase
impressions		placement	
T4, P1	T7, P1		
T18, P1			
T22, A1			
T22, A2			

(c) Micro-conversions of session S3 -603

Figure 6: An example of micro-conversions in an online store

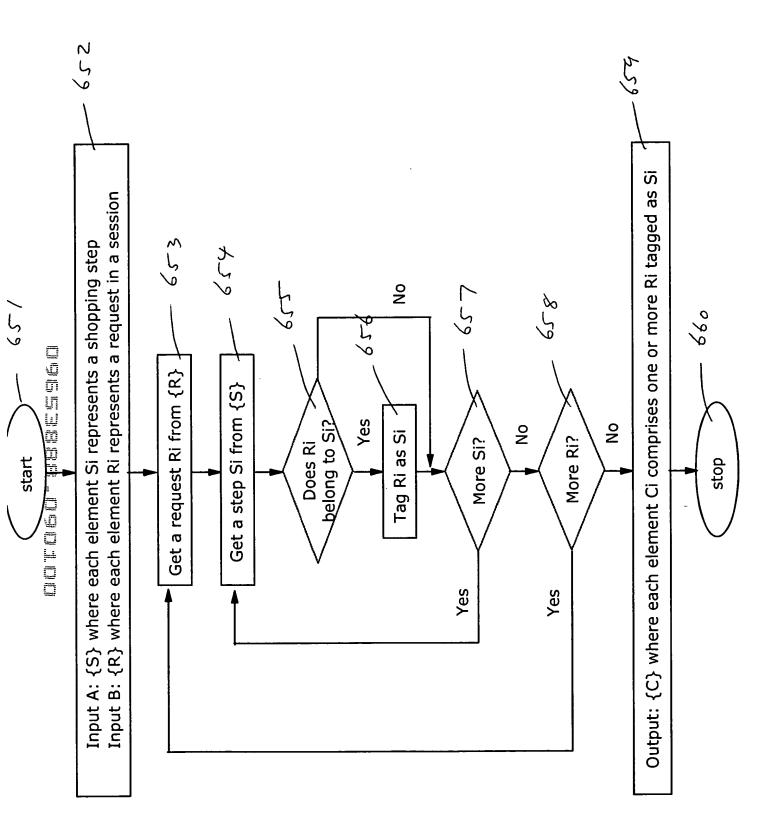


Figure 6A: A flow chart of a shopping step finder process

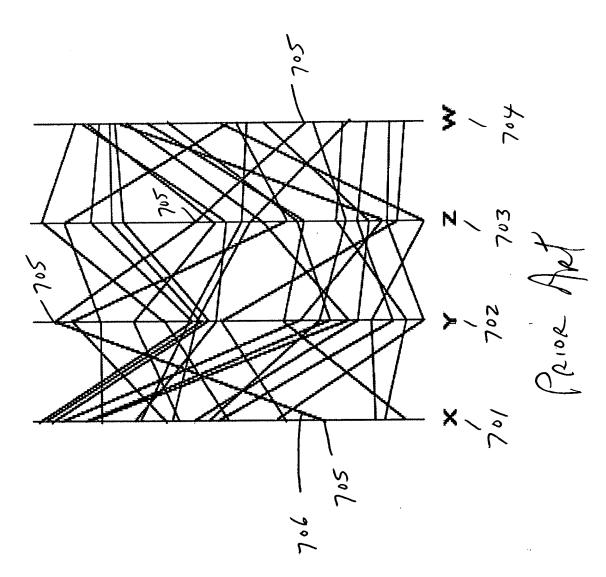


Figure 7: An example of a traditional parallel coordinate system

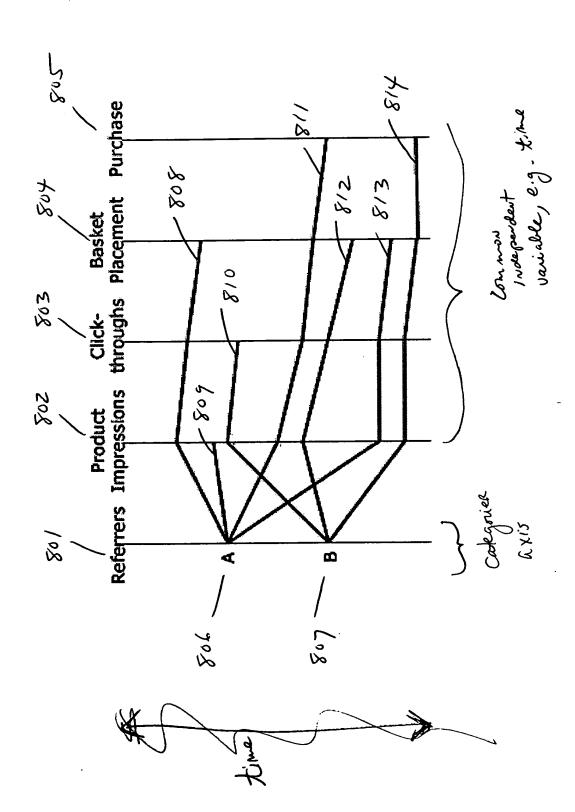


Figure 8: An example of a micro-conversion visualization with a parallel coordinate system

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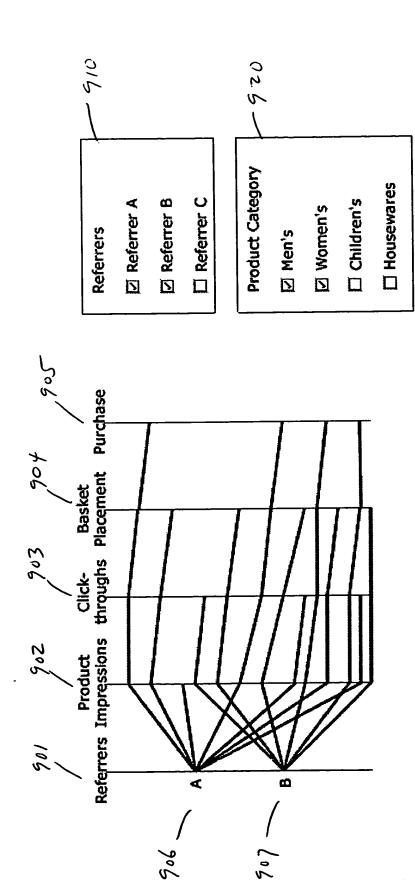


Figure 9: An example of a micro-conversion visualization with filters

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9001	Links	A, B, P1, Search	Basket	A, B, P1, Search	A1, A2	B, C, D, Search		C2, C3, D1	Basket, C	C2, C3, D1	Basket, C	A, B, C, D, Search		A1, B1, C3, D2	Basket, D	Purchase, Home	A, B, C, D, Search	D1, D2, D3	Basket, D	Purchase, Home	Thank You	Home
1005	Current Page	Home	P1	Home	А	Home	Search	Search Results	C2	Search Results	ည	Home	Search	Search Results	D2	Basket	Home	D	D3	Basket	Purchase	Thank You
1003 1004	Referrer	R3	Home	P1	Home	ST1	Home	Search	Search Results	C2	Search Results	ST2	Home	Search	Search Results	D2	Basket	Home	Ο	D3	Basket	Purchase
2001	Store	ST1	ST1	ST1	ST1	ST2	ST2	ST2	ST2	ST2	ST2	ST3	ST3	ST3	ST3	ST3	ST3	ST3	ST3	ST3	ST3	ST3
	Session ID	S3	S3	S3	S3	S3	S3	53	S3	S3	. 23	S3	S3	S3	S3	S3	S3	S3	S3	S3	S3	S3
1001	Timestamp	T4	T7	T18	T22	T23	T24	T25	T26	T27	T28	T29	T30	T31	T32	T33	T34	T35	T36	T37	T38	T39

Figure 10: An example of a session browsing more than one online stores

	2011	Purchase	T38, D2, ST3	T38, D3, ST3															
المالات عدددد	1103	Basket placement	T33, D2, ST3	T37, D3, ST3															
	2011	Clickthroughs	T7, P1, ST1	T26, C2, ST2	T28, C3, ST2	T32, D2, ST3	T36, D3, ST3												
	1011	Product impressions	T4, P1, ST1	T18, P1, ST1	T22, A1, ST1	T22, A2, ST1	T25, C1, ST2	T25, C3, ST2	T25, D1, ST2	T27, C2, ST2	T27, C3, ST2	T27, D1, ST2	T31, A1, ST3	T31, B1, ST3	T31, C3, ST3	T31, D2, ST3	T35, D1, ST3	T35, D2, ST3	T35, D3, ST3

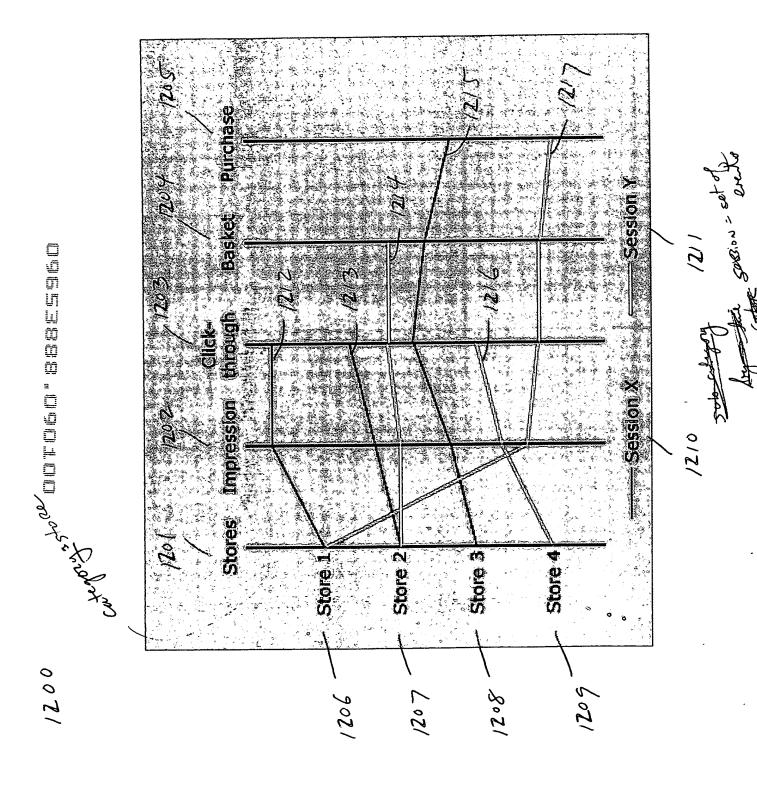


Figure 12: An example of visualizing shopping activities in more than one online stores